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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARCO STURA and MONICA ZIBELLI

Appeal 2008-4047
Application 09/898,962
Technology Center 3600

Decided:¹ February 11, 2009

Before WILLIAM F. PATE, III, LINDA E. HORNER and
JOHN C. KERINS, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Marco Stura et al. (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 14-26. Claims 1-13 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM-IN-PART.

THE INVENTION

The Appellants' claimed invention is a refrigeration appliance with a door containing electrically operated devices. Spec. 1:¶0002. Claim 14, reproduced below, is representative of the subject matter on appeal.

14. A refrigerator comprising:
 - a cabinet defining at least one food preservation compartment and having at least a first conductor configured to connect to a source of electricity;
 - a door for selectively closing the cabinet and having at least a second conductor configured to supply power to at least one user device provided on the door; and
 - an electrical connection device coupling the first and second conductors and comprising a hinge connecting the cabinet to the door and the hinge comprising an electrically conductive first hinge plate mounted to the cabinet and electrically coupled to the first conductor, an electrically conductive second hinge plate mounted to the door and electrically coupled to the second conductor,

wherein the first and second hinge plates are electrically coupled to define an electrically conductive path from the first conductor to the first hinge plate to the second hinge plate to the second conductor to supply power from the source of electricity to the user device.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Mills	2,778,000	Jan. 15, 1957
Pulaski	3,089,202	May 14, 1963
Phelps	3,103,398	Sept. 10, 1963
Hoffman	3,955,044	May 4, 1976

The Appellants seek our review of the following rejections:

1. The Examiner rejected claims 14-17, 24, and 26 under 35 U.S.C. § 103(a) as unpatentable over Pulaski and Phelps.
2. The Examiner rejected claims 18-20 and 25 under 35 U.S.C. § 103(a) as unpatentable over Pulaski, Phelps, and Mills.
3. The Examiner rejected claims 21-23 under 35 U.S.C. § 103(a) as unpatentable over Pulaski, Phelps, and Hoffman.

ISSUES

The Examiner found that claims 14-17, 24, and 26 were unpatentable in view of Pulaski and Phelps. Ans. 3-4. Appellants contend there was no reason to combine these references, and that the prior art does not teach the current path required by claim 14. App. Br. 4-10.

The first issue before us is:

Have Appellants shown that the Examiner erred in rejecting claims 14-17, 24, and 26 because there was no reason to combine these references, or because the prior art does not teach the current path required by claim 14?

The Examiner found that claims 18-20 and 25 were unpatentable in view of Pulaski, Phelps, and Mills. Ans. 4. Appellants contend there was no reason to combine Pulaski with Phelps, there was no reason to further combine with Mills, that the prior art does not teach the claimed current path, and that the combined references do not teach electrically conductive hinge plates. App. Br. 11-12; Reply Br. 4-5.

The second issue before us is:

Have Appellants shown that the Examiner erred in rejecting claims 18-20 and 25 because there was no reason to combine Pulaski with Phelps, there was no reason to further combine with Mills, the prior art does not teach the claimed current path, or the combined references do not teach electrically conductive hinge plates?

The Examiner found that claims 21-23 were unpatentable in view of Pulaski, Phelps, and Hoffman. Ans. 4-5. Appellants contend there was no reason to further combine the prior art with Hoffman because neither Pulaski nor Phelps has a need to prevent electrolytic corrosion. App. Br. 15.

The third issue before us is:

Have Appellants shown that the Examiner erred in rejecting claims 21-23 because there was no reason to modify Pulaski and Phelps with the

teaching of Hoffman because neither Pulaski nor Phelps have a need to prevent electrolytic corrosion?

FINDINGS OF FACT

We find that the following enumerated facts are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Pulaski discloses an electrical hinge arrangement for a rigid foam insulated door structure that accommodates conductors to supply electricity to electrical devices in the door of a structure. Pulaski, col. 1, ll. 8-12; col. 1, ll. 56-60.
2. An object of Pulaski's invention is to provide an improved rigid foam insulated door and hinge structure that provides freedom of movement for a sufficient length of conductor lead-in so that after installation of the foam there is a limited twisting action of the conductors resulting from opening of the door. Pulaski, col. 1, ll. 49-55 & 56-60; col. 2, ll. 26-35.
3. To provide that freedom of movement, pair of conductors 23 is shielded within thimble 26 to prevent foam from encasing a portion of the length of conductor 23. Pulaski, col. 2, ll. 53-63.
4. Pulaski does not disclose that other methods of providing electricity to the door of a structure would be unsuccessful. Pulaski, *passim*.

5. Pulaski does not disclose use of aluminum conductors. Pulaski, *passim*.
6. Phelps discloses hinges that are particularly adapted to supply electricity from the cabinet to electrical devices in the door of that cabinet. Phelps, col. 1, ll. 9-14.
7. Phelps teaches the repeated movement of the doors of the cabinet subjects the wire to wear and deterioration. Phelps, col. 1, ll. 51-57.
8. Phelps discloses a pair (top and bottom) of hinges each comprised of top leaf 36 and bottom leaf 37. Phelps, col. 3, ll. 37-39.
9. In the top hinge, bottom leaf 37 has countersunk screw openings 46 to permit screws 47 to attach leaf 37 to door 18. Phelps, col. 3, ll. 56-59.
10. Top leaf 36 has countersunk openings 42 to permit screws 34 to attach leaf 36 to cabinet 10. Phelps, col. 3, ll. 44-46.
11. Leaves 36 and 37 are connected by pin 51 that has a rounded head 52 on the top, pin 51 passes through: washer 49, circular opening 43 of leaf 36, washer 48, and finally circular opening 45 of leaf 37, after which the lower end is peened to prevent withdrawal. Phelps, col. 3, l. 62 to col. 4, l. 3; Fig. 6.
12. The bottom hinge is installed like the top hinge, except that leaf 36 connects to door 18 and leaf 37 connects to cabinet 10. Phelps, col. 3, ll. 39-40; Fig. 7.
13. The conductive path of the top hinge can be traced as follows: from lead 27, to screw 34, to leaf 36, to pin 51, to leaf 37, to screw 47, to lead 61, and then to the electrical device in door 18 so that electrical

power is supplied to the device in the door. Phelps, col. 4, ll. 34-52.

14. Phelps does not disclose use of aluminum conductors. Phelps, *passim*.
15. Mills discloses a hinge structure to convey electricity from a stationary to a movable object, such as from a refrigerator cabinet to the door. Mills, col. 1, ll. 15-18; ll. 34-38.
16. Mill's hinge 12 is comprised of hinge butt 13 and hinge leaf 14, both constructed of electrical insulating material that shields the conductive parts of the hinge from contact with the cabinet and door. Mills, col. 1, l. 72 to col. 2, l. 1; col. 3, ll. 21-44; Fig. 1.
17. Hinge 12 is secured to the cabinet and door by electrical current conducting bolts 30, 35, and nuts 33, 38, and each bolt is shielded from electrical contact with the cabinet or door by insulation blocks 32, 37. Mills, col. 2, ll. 25-32.
18. Hoffman discloses "corrosion proof terminals for solid or stranded aluminum wire." Hoffman, col. 1, ll. 11-12.
19. Hoffman's device is designed to counter the problems associated with copper-aluminum terminations. Hoffman, col. 1, ll. 13-64.

PRINCIPLES OF LAW

Burden on Appeal

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a

rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Bodily incorporated

“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). *See also In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”); and *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) (“Combining the teachings of references does not involve an ability to combine their specific structures.”). Rather, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, ___, 127 S.Ct. 1727, 1740 (2007).

Teaching Away

Whether a reference teaches away from a claimed invention is a question of fact. *In re Harris*, 409 F.3d 1339, 1341 (Fed. Cir. 2005).

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference would be led in a direction divergent from the path that was taken by the applicant.” *In re Haruna*, 249 F.3d 1327,

1335 (Fed. Cir. 2001). “[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious.” *KSR*, 550 U.S. at ___, 127 S.Ct. at 1740 (citing *United States v. Adams*, 383 U.S. 39, 51-52 (1966)). “When a piece of prior art ‘suggests that the line of development flowing from the reference’s disclosure is unlikely to be productive of the result sought by the applicant’ the piece of prior art is said to ‘teach away’ from the claimed invention.” *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (quoting *In re Gurley*, 27 F.3d 551, 53 (Fed. Cir. 1994)).

ANALYSIS

Rejection of claims 14-17, 24, and 26 under 35 U.S.C. § 103(a) as unpatentable over Pulaski and Phelps

The Appellants argue claims 14-17, 24, and 26 as a group. App. Br. 4. As such, we select claim 14 as the representative claim, and claims 15-17, 24, and 26 stand or fall with claim 14. 37 C.F.R. § 41.37(c)(1)(vii) (2008).

Appellants contend there is no valid reason to combine Pulaski with Phelps, and that even if there is a reason to combine, the combination does not meet each element of the claim.

First, Appellants argue that Pulaski teaches away from the proposed combination because Pulaski discloses an electrical hinge with controlled twisting and flexing of the conductor wires leading from the cabinet to the door, while Phelps teaches connecting the conductors to a hinge so that no conductors pass between the cabinet and the door. App. Br. 8. Appellants

contend that it is not possible to reconcile the two concepts and therefore the combination is improper. *Id.*

Appellants' argument suggests that if two references operate by different concepts, they necessarily teach away from each other and there is no reason to combine. This is not the law regarding teaching away. A reference teaches away, if upon reading it, a person of ordinary skill in the art would be led in a direction different from that taken by Appellants. *In re Haruna*, 249 F.3d 1327, 1335 (Fed. Cir. 2001).

Pulaski teaches providing electricity from the cabinet to the door by passing conductors through the hinge and into the door (Facts 1-3). In order for Pulaski to teach away from an approach in which conductors do not pass through the hinge, such as is taken by Appellants, Pulaski would have to suggest that approach is unlikely to be productive of the result sought by the Appellants. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (quoting *In re Gurley*, 27 F.3d 551, 53 (Fed. Cir. 1994)). Pulaski makes no such suggestion (Fact 4). Further, as the Examiner found, Phelps quite specifically teaches that movement of the door subjects wires to wear and deterioration (Fact 7), providing a reason to employ the hinge of Phelps in the device of Pulaski. Pulaski does not teach away from Appellants' solution.

Appellants also contend that where a proposed combination requires a substantial reconstruction and redesign of the elements and the rejection changes the basic operating principles of the reference, then the combination is not a proper ground of rejection. App. Br. 8-9 (citing *In re Ratti*, 270 F.2d 810 (CCPA 1959)). Appellants maintain *Ratti* controls in this case because the combination suggested by the Examiner would require a substantial

reconstruction of the elements of Pulaski to include complete reconstruction of the hinge, and that this would destroy the “wired principle” of Pulaski.

App. Br. 9.

The combination set forth in the rejection, however, does not require a substantial reconstruction of Pulaski’s hinge. Rather, the rejection states that the hinge of Phelps will replace the hinge of Pulaski (Ans. 4). The Examiner’s proposed modification is the mere substitution of one element for another known in the field to yield a predictable result. *KSR*, 550 U.S. at ___, 127 S. Ct. at 1740 (citing *United States v. Adams*, 383 U.S. 39, 50-51 (1966)). Given this distinction, *Ratti* is not applicable here.

Appellants have failed to demonstrate error in the Examiner’s reason to combine these references.

Appellants’ final attack on this rejection is that the combined references do not teach the conductive path required by claim 14: “from the first conductor to the first hinge plate to the second hinge plate to the second conductor to supply power from the source of electricity to the user device.” App. Br. 9-10. This is incorrect.

The rejection combines the device of Pulaski and Phelps by using the hinge of Phelps to replace the hinge of Pulaski.² Ans. 3-4; 7-8. Phelps discloses a hinge that conducts electricity from a screw that attaches to the cabinet, through the first hinge plate, to the pivoting pin of the plate, through the second hinge plate, to the screw that attaches the second plate to the door, and to a conductor in the door (Facts 6-13). When this hinge of Phelps is used in combination with the device of Pulaski, a conductor (lead) of

² We interpret the rejection to mean the hinge pair of Pulaski is replaced by the hinge pair of Phelps so that a closed path is created for the electricity.

Pulaski is connected to a screw on each side of Phelps's hinge. This creates a conductive path from the first conductor to the first hinge plate to the second hinge plate to the second conductor to supply power from the source of electricity to the user device as required by claim 14. As such, the combined teachings of the references meet all of the elements of claim 14.

Rejection of claims 18-20 and 25 under 35 U.S.C. § 103(a) as unpatentable over Pulaski, Phelps, and Mills

The Appellants argue claims 18-20 and 25 as a group. App. Br. 11. As such, we select claim 18 as the representative claim, and claims 19, 20, and 25 stand or fall with claim 18. 37 C.F.R. § 41.37(c)(1)(vii) (2008).

Dependent claim 18 includes the limitation that the first and second electrically conductive fasteners are insulated from the cabinet and door.

The rejection of claim 18 took the combination of references used to reject claim 14 (Pulaski with the hinge pair of Phelps) and added a teaching from Mills. In the Pulaski and Phelps combination, each hinge leaf and attaching screws are directly connected to the cabinet and door, respectively. This creates the potential for electricity to dissipate or a short circuit. The Examiner found that Mills teaches bushing members and insulating members that insulate conductive hinge parts from the door and cabinet. Ans. 4. The Examiner concluded the claimed subject matter would have been obvious in view of adding this teaching of Mills to the combination of Pulaski's device with the hinge of Phelps to prevent a short circuit and dissipation of electricity. *Id.*

Mills discloses a hinge that conducts electricity from a cabinet to a door, while shielding the conductive parts of the hinge from contact with the

cabinet or door (Facts 15-17). Adding Mills's teaching to the combination of Pulaski and Phelps makes two changes: one, Mills's conductive bolts with insulation shields simply replace the screws of Phelps for connecting the hinge of Phelps to the device of Pulaski; and two, in the same way the hinge plates of Mills shield the conductive parts of Mills's hinge, the hinge of Phelps is insulated from contact with the cabinet and door of Pulaski.

Turning now to Appellants' arguments, Appellants contend there is no valid reason to combine the art in the manner claimed, and then argue the combined references do not meet all elements of the claim.

Appellants' first repeat the contentions used against claim 14 that there is no reason to combine Pulaski with Phelps. App. Br. 11. These arguments are unconvincing for the reasons provided in the analysis of claim 14, *supra*.

Appellants' second argument is that Pulaski and Phelps provide adequate insulation of the conductive path so that there would be no motivation to use the teaching of Mills to add insulation. App. Br. 12. This is not correct, because as noted above, the Pulaski and Phelps combination creates the potential for a short circuit or dissipation of the electricity because each hinge leaf of Phelps connects directly to the door or cabinet. Based on that, the motivation recited by the Examiner to insulate conductive hinge parts from the door and cabinet remains a valid reason to combine.

Appellants next maintain that the rejection does not meet each element of the claim because Pulaski and Phelps do not teach the claimed current path, and that Mills does not correct this deficiency. App. Br. 12. This argument does not demonstrate error, because, as we found in the

analysis of claim 14, *supra*, Pulaski and Phelps teach the claimed current path.

Appellants' final attack on this rejection is that "Mills does not teach and [sic] insulating block between the hinge plate and the refrigerator. It teaches insulated hinge plates through which a conduit passes." Reply Br. 4. Appellants maintain that because claim 18 includes a requirement for electrically conductive hinge plates, the rejection including Mills (with insulating hinge plates) is improper. *Id.*

Appellants characterize the rejection as if the non-conductive hinge of Mills replaces the hinge of Phelps. This is not the case. The rejection is not bodily incorporating the non-conducting hinge plates of Mills into the modified device of Pulaski; rather, the rejection specifies a person of ordinary skill in the art would recognize the Mills technique of insulating the conducting parts of the hinge from the cabinet and door is being used to improve the combination of Pulaski and Phelps. *KSR*, 550 U.S. at ___, 127 S.Ct. at 1740 ("if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill"); *see also* Ans. 4, and description of the rejection, *supra*.

The rejection meets each element of the claim, and Appellants have failed to demonstrate the Examiner has erred.

Rejection of claims 21-23 under 35 U.S.C. § 103(a) as unpatentable over Pulaski, Phelps, and Hoffman

The Examiner determined it would have been obvious to a person of ordinary skill in the art to modify the conductors of the Pulaski and Phelps combination with the reinforcement member of Hoffman “to eliminat[e] electrolytic corrosion.” Ans. 5.

Hoffman discloses corrosion-proof terminals for aluminum wire specifically designed to combat the problems associated with copper-aluminum terminations (Facts 18-19). Given that the Pulaski and Phelps references cited by the Examiner do not disclose the use of aluminum wire (Facts 5, 14), and would not have the problems associated with copper-aluminum connections, a person of ordinary skill in the art would have had no reason to combine the teachings of Hoffman with the Pulaski and Phelps combination.

CONCLUSIONS

Appellants failed to show the Examiner erred in rejecting claims 14-17, 24, and 26 because there was a reason to combine the Pulaski and Phelps references, and the prior art does teach the claimed current path.

Appellants failed to show the Examiner erred in rejecting claims 18-20 and 25 because there was a reason to combine Pulaski with Phelps and Mills, the prior art does teach the claimed current path, and the combined references teach electrically conductive hinge plates.

Appellants have shown that the Examiner erred in rejecting claims 21-23 because there was no reason to combine the teachings of Hoffman

Appeal 2008-4047
Application 09/898,962

with the Pulaski and Phelps combination, because neither Pulaski nor Phelps has a need to prevent electrolytic corrosion.

DECISION

We affirm the Examiner's rejection of claims 14-20 and 24-26.

We reverse the Examiner's rejection of claims 21-23.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED-IN-PART

vsh

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